Smart Multivariable Transmitter (SMV 3000)
Electronics Module Replacement Kit Instruction

Electronics Module (Part number 51404208 –503, -513)

Document

Form: 34-SM-33-01
Effective: 09-01
Supersedes: 34-SM-33-01, Date 8/95

Summary

This instruction assumes that you are somewhat familiar with SMV 3000 transmitters and so it is designed to aid you in the replacement of the Electronics Module of your SMV 3000 Smart Multivariable Transmitter. The Electronics module consists of the Main Printed Wiring Assembly (PWA), Temperature PWA and connecting hardware. A plug-in PROM is also a part of the SMV electronics and is supplied separately.

The replacement Electronics module packaged with this instruction is a direct replacement for the existing Electronics module in your SMV 3000 transmitter.

ATTENTION

Once the Electronics module has been replaced, the transmitter will require a bench calibration using precision ABSOLUTE pressure equipment and/or precision DRAFT pressure equipment, depending upon the transmitter model. Refer to the SMV 3000 User's Manual for the correct procedure.

Tools Needed

You will need the following tools and equipment to perform the replacement procedures:

- SCT 3000 Smart Configuration Toolkit software application loaded on a laptop PC
- 3mm Allen wrench
- Medium flat-blade screwdriver
- Medium phillips screwdriver

ATTENTION

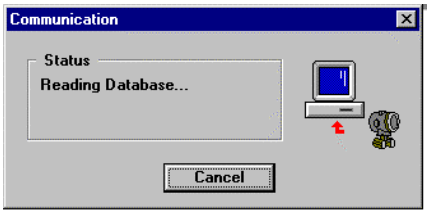
This equipment contains devices that can be damaged by electrostatic discharge. It is imperative that assemblies containing static-sensitive devices are carried in conductive plastic bags. When adjusting or performing any work on such assemblies, electrostatic discharge (ESD) mats, grounded work stations, and wrist straps must be used.

Save Transmitter Database

Use the procedure in Table 1 to create a file containing the transmitter's database so that it can be downloaded to the transmitter after the Electronics module has been replaced. Also, record any transmitter status messages and the PROM serial number for reference before you begin the replacement procedure.

This procedure assumes that you are using the Smart Configuration Toolkit, SCT 3000 connected to the SMV 3000 transmitter loop.

Table 1 Save SMV Transmitter Database

Step	Click on . . .	Display	Result or Action
1	SCT.exe or the SCT icon on your desktop.	SCT title window is displayed.	A user name is required to open SCT application.
2	Enter user name.		The SCT application is opened.
3	Upload from the Device dropdown menu - or - Click on the Upload icon in the toolbar. 	Dialog box showing the upload action. 	The transmitter database is uploaded to the SCT. **ATTENTION** Be patient, this operation may take up to five minutes or longer.
4	"Device"Tab	Displays the Device tab card.	The tab card contains the following information about the transmitter: Tag ID, Transmitter type, PROM serial number (PROM ID) and Firmware version. Record the PROM serial number: _____
5	"Status" Tab	Displays the status of the transmitter.	Record any status messages displayed in the window: _____ _____ _____ _____
6	Save As from the File dropdown menu.	Dialog box that allows you to name a file (transmitter database) to save.	The transmitter database is saved as a SCT file that you named. Record the file name: _____

Record PROM ID (If you are replacing the PROM)

The plug-in PROM on the Main PWA is uniquely characterized to the meter body of the given transmitter. For this reason, each PROM is given a 10-digit identification number so you can verify that the new PROM is a correct match for the given transmitter. The PROM identification number is stamped on the nameplate on the transmitter's meter body and appears on a label under the PROM.

Record the PROM number from the transmitter's meter body nameplate: _____

Verify that the **number on the new PROM** label matches the number on the transmitter's meter body, and the PROM serial number recorded in step 4 on Page 2 If the numbers do not match, contact Honeywell Technical Assistance. Telephone numbers are given on last page of this instruction.

CAUTION

When installed in a hazardous location, keep covers tight while the transmitter is energized. Disconnect power to the transmitter in the non-hazardous area prior to opening electronics housing for service, or determine that the location is non-hazardous prior to disconnecting or connecting the transmitter wires.

Assembly Diagram

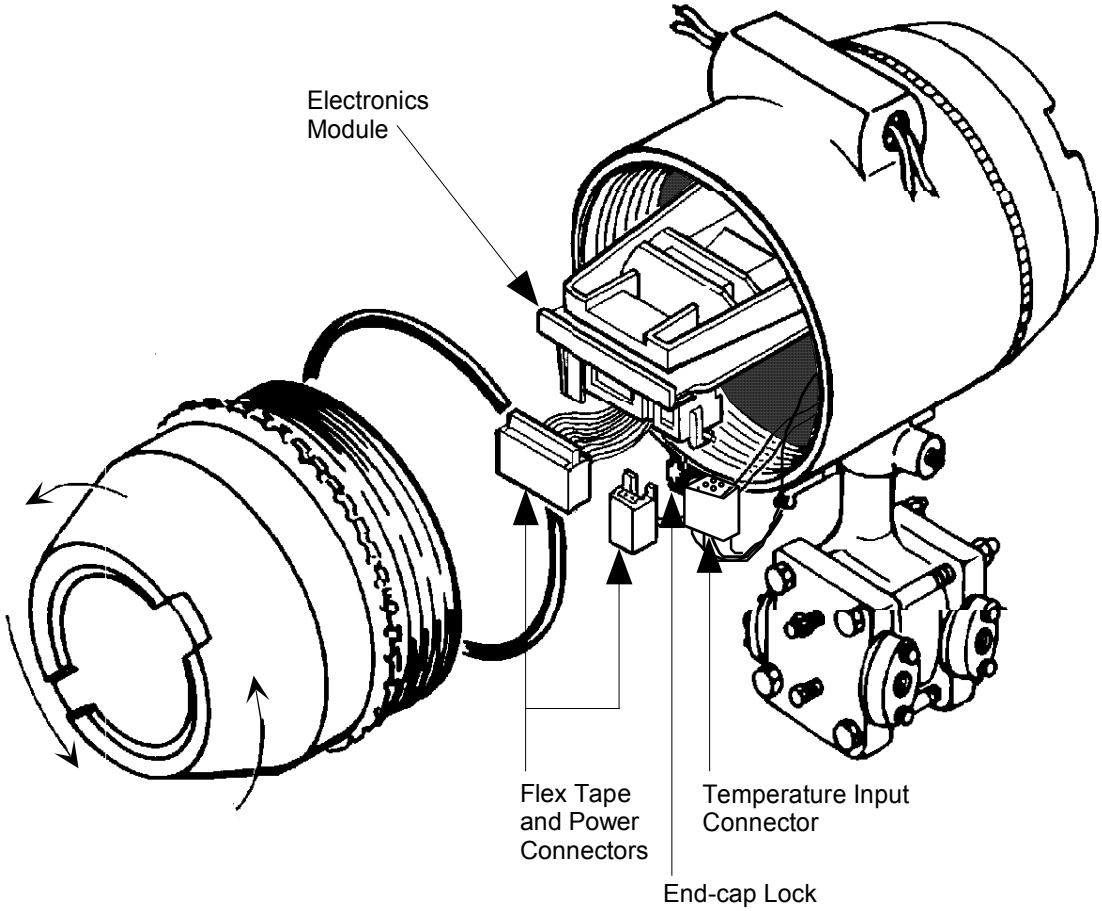
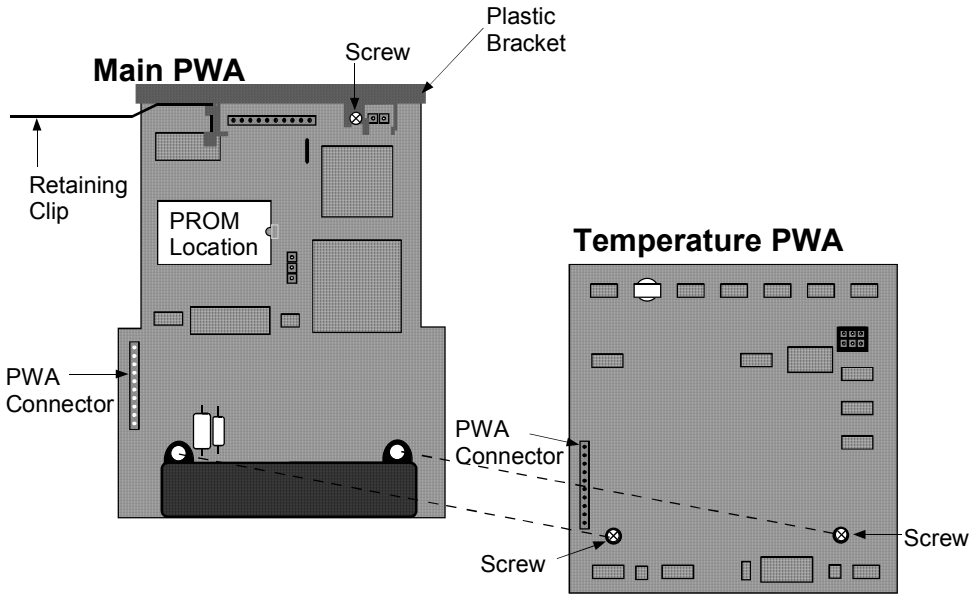


Figure 1 SMV Electronics Module and Connectors

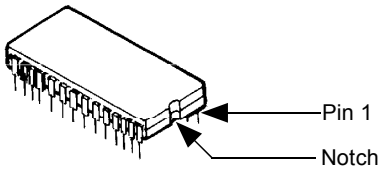
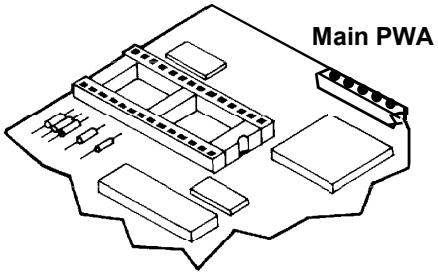
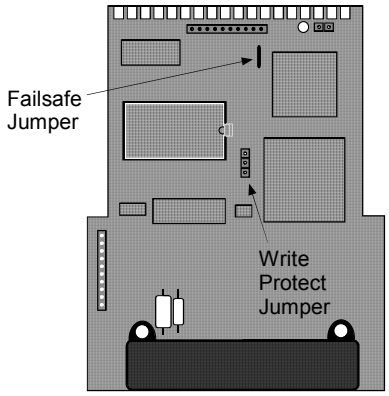
Replacing Electronics Module

The electronics module inside the SMV transmitter consists of two PWAs: The Main electronics PWA and the Temperature PWA. The PWAs are attached to each other by screws, a plastic bracket and a connector. A plug-in PROM is also a part of the SMV 3000 electronics and it is supplied separately.

Table 2 SMV 3000 Electronics Module Replacement Procedure

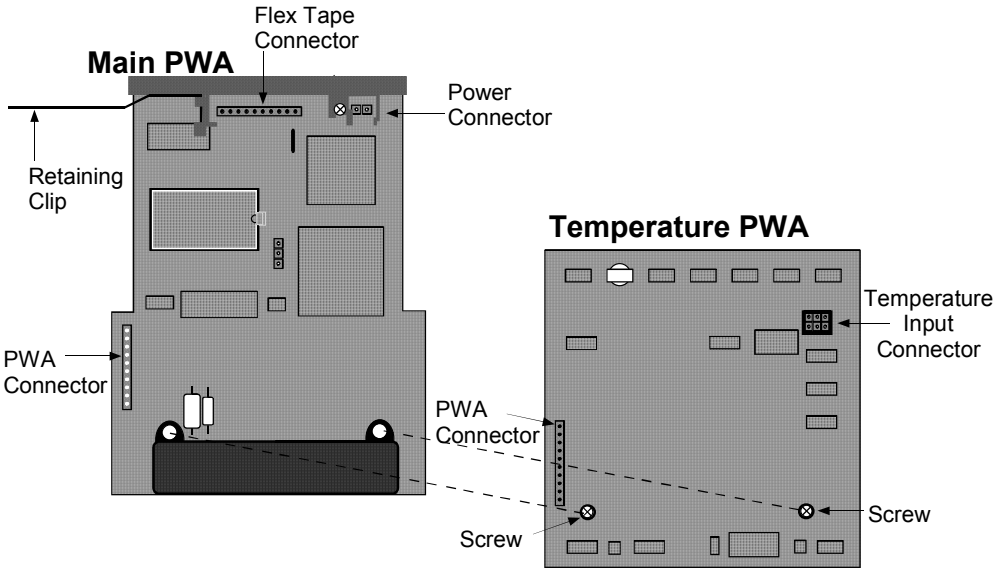
Step	Action
1	Remove power from the transmitter. We recommend that you remove the transmitter from service and move it to a clean area before taking it apart
2	Loosen end-cap lock (4mm Allen wrench) on the electronics side of the electronics housing and unscrew the end cap. See Figure 1.
3	Release metal retaining clip from underside of electronics module. Refer To Figure 1. • Unplug flex-tape connector and power connector from electronics module. • Unplug temperature input connector from temperature PWA on underside of module.
4	Loosen two captive mounting screws on topside of electronics module and carefully pull module out from transmitter housing.
5	Using the new Electronics module, remove screw holding the plastic bracket and retaining clip to Main PWA and remove bracket from Main PWA. See figure. Note that the end of temperature PWA engages slot in bracket. 

Procedure continued on next page ⇒

Step	Action
6	Referring to figure in Step 5. On the replacement Electronics module, remove two retaining screws and carefully pull Temperature PWA straight up to disconnect it from the Main PWA.
7	With component side of the new Main PWA facing up, locate PROM socket on PWA. See figure in step 5 for PROM location. We recommend that you use a ground strap or ionizer when handling the PROM, since electrostatic discharges can cause PROM failures.
8	Align notch and Pin 1 of new PROM with the notch in IC socket on new Main PWA. Carefully plug PROM into socket.  
9	Be sure that write protection jumper is in the desired position. Also check if failsafe jumper is cut or intact as desired. See SMV 3000 User's Manual for details on write protection and failsafe settings. **Main PWA** 

Procedure continued on next page ⇒

Step	Action
10	Align PWA connector on Temperature PWA over the connector on Main PWA and slide connector pins through Temperature PWA connector. See figure. Replace two retaining screws and secure Temperature and Main PWA to bracket (located on underside of Main PWA).



11	Replace plastic bracket and retaining clip over ends of Main PWA and Temperature PWA. Note that the end of Temperature PWA engages slot in bracket. Secure with a screw.
12	Carefully insert electronics module back into transmiter housing. Secure to housing with the two captive mounting screws on topside of electronics module.
13	Refer to figure in step 10 and Figure 1. • Reconnect temperature input connector to Temperature PWA on underside of module. • Reconnect flex-tape connector and power connector to Main PWA. • Secure metal retaining clip on underside of electronics module.

ATTENTION

Once the Electronics module has been replaced, the transmitter will require a bench calibration using precision ABSOLUTE pressure equipment and/or precision DRAFT pressure equipment, depending upon the transmitter model. Refer to the SMV 3000 User's Manual for the correct procedure.

NOTE: You may need to download a valid configuration to the transmitter before beginning the calibration.

Procedure continued on next page ⇒

Step	Action
14	Lubricate end-cap threads and O-ring with silicon grease such as Dow Corning #33 or equivalent before you replace end cap. Be sure to "dress" all lead wires away from end cap threads. Tighten end-cap lock.
15	Return transmitter to service and turn ON power.
16	Reconnect the SCT 3000 to the transmitter loop. Using SCT to view the Device tab card, verify that transmitter's PROM ID number matches the original PROM ID number recorded on Page 2.
17	Open the file containing the transmitter database saved previously in Table 1 procedure.
18	Restore transmitter's database by downloading file from the SCT to the transmitter. (Perform a download.)
19	Using SCT, check transmitter status and verify that status messages are same as those confirmed on Page 2.

Technical Assistance

If you encounter a problem during the replacement procedure, you can obtain direct factory technical assistance by calling our Honeywell Solution Support Center between the hours of 8:00 am and 4:00 pm EST Monday through Friday.

1-800-423-9883 (U.S. only)

Or

Outside the U.S. call: **1-602-313-6510**

You can also e-mail your technical questions or comments about this product to Honeywell Solution Support Center e-mail: **ace@honeywell.com**